

## CALIFORNIA CODE OF REGULATIONS TITLE 27

### **20080. SWRCB - General Requirements.** (C15: §2510)

(a) **Scope**—The regulations in this subdivision that are promulgated by the State Water Resources Control Board (**SWRCB**) pertain to water quality aspects of discharges of solid waste to land for treatment, storage, or disposal. The SWRCB-promulgated regulations in this subdivision establish waste and site classifications and waste management requirements for solid waste treatment, storage, or disposal in landfills, surface impoundments, waste piles, and land treatment units. Requirements in the SWRCB-promulgated portions of this subdivision:

- (1) **Minimum standards**—are minimum standards for proper management of each waste category. Regional boards may impose more stringent requirements to accommodate regional and site specific conditions;
- (2) **MSW Landfill Requirements**—as they apply to MSW landfills, are superseded by any more stringent requirements in SWRCB Resolution No. 93-62 (Section 2908, Title 23 of this code) or in the federal MSW regulations (40CFR258);
- (3) **Utilize Abbreviated Internal References**—make reference only to requirements of the sections within this subdivision, unless otherwise stated. Under this internal reference convention: (A) any unenumerated paragraph reference in this division [*e.g.*, “&(c),” or “&(d)(2)(A-D)” (*i.e.*, *subsections A through D, inclusive*)] is to be found in the same section as the referring subsection; and (B) any enumerated reference that does not explicitly identify a source outside this subdivision [*e.g.*, “§20200”, “§20220(b),” or “Article 2, Subchapter 3, Chapter 3”] is to be found in this subdivision; and
- (4) **Contain Nonregulatory Notes and Examples**—contain some nonregulatory language that is needed in a body of multi-agency regulations such as this in order to improve clarity and continuity. Such non-regulatory language is always italicized, is always set off from adjacent regulatory text by parentheses or brackets, serves an obviously explanatory function, and typically begins with either “*Note.*” or “*e.g.*,”. In the SWRCB-promulgated sections of this subdivision, such italicized notes and examples are intended only to provide the reader with useful guidance, and do not constitute standards having regulatory effect.

(b) **Engineered Alternatives Allowed**—Unless otherwise specified, alternatives to construction or prescriptive standards contained in the SWRCB-promulgated

regulations of this subdivision may be considered. Alternatives shall only be approved where the discharger demonstrates that:

(1) the construction or prescriptive standard is not feasible as provided in &(c); and

(2) there is a specific engineered alternative that:

(A) is consistent with the performance goal addressed by the particular construction or prescriptive standard; and

(B) affords equivalent protection against water quality impairment.

(c) **Demonstration [for &(b)]**—To establish that compliance with prescriptive standards in this subdivision is not feasible for the purposes of &(b), the discharger shall demonstrate that compliance with a prescriptive standard either:

(1) is unreasonably and unnecessarily burdensome and will cost substantially more than alternatives which meet the criteria in &(b); or

(2) is impractical and will not promote attainment of applicable performance standards.

The RWQCB shall consider all relevant technical and economic factors including, but not limited to, present and projected costs of compliance, potential costs for remedial action in the event that waste or leachate is released to the environment, and the extent to which ground water resources could be affected.

(d) **Existing & New Units**—Units which were operating, or had received all permits necessary for construction and operation, on or before November 27, 1984, are designated as “existing” Units. This includes disposal sites classified under previous regulations and unclassified Units. Dischargers shall continue to operate existing Units under existing classifications and WDRs until those classifications and requirements are reviewed in accordance with §21720(c). Existing Units shall be closed and maintained after closure according to Subchapter 5, Chapter 3 of this subdivision (§20950 et seq.). All other Units (including expansions and reconstructions of existing Units initiated after November 27, 1984) are “new” Units. For discharges at new Units, the discharger shall comply with all applicable provisions of this division, as summarized in Table 3.1 [of Article 3, Subchapter 2, Chapter 3 of this subdivision] and in §20310(d). Pending review and reclassification, the following SWRCB-promulgated provisions of this division shall apply to existing Units:

(1) except with regard to Units which were closed, abandoned, or inactive on or before November 27, 1984 [such Units are addressed separately, under

&(g)], all dischargers are required to be in compliance with the monitoring program requirements [in Article 1, Subchapter 3, Chapter 3, Subdivision 1 of this division (§20380 et seq.)];

(2) dischargers may be required to submit additional technical and monitoring reports to the RWQCB as determined to be necessary on a case by case basis.

(e) **Reclassification**—In reviewing WDRs for existing Units, the RWQCB shall consider the results of monitoring programs developed under &(d)(1) and technical and monitoring reports submitted under &(d)(2). Existing Units shall be reclassified according to the geologic siting criteria in Article 3, Subchapter 2, Chapter 3, Subdivision 1 of this division (§20240 et seq., as summarized in Table 3.1 of that article) and shall be required to comply with applicable SWRCB-promulgated construction standards in Article 4, Subchapter 2, Chapter 3, Subdivision 1 of this division [as summarized in §20310(d)] as feasible. To establish that retrofitting is not feasible, the discharger shall be required to make the demonstrations in &(b) and &(c).

(f) **WDRs Implement Regulations**—The RWQCB shall implement the SWRCB-promulgated regulations in this subtitle through the issuance of WDRs for Units.

(g) **CAI Units**—Persons responsible for discharges at Units which were closed, abandoned, or inactive on or before November 27, 1984 (**CAI Units**), may be required to develop and implement a detection monitoring program in accordance with Article 1, Subchapter 3, Chapter 3, Subdivision 1 of this division (§20380 et seq.). If water quality impairment is found, such persons may be required to develop and implement a corrective action program under that article.

(h) **Mining Waste**—Discharges of mining waste, as defined in §22470(a), shall be regulated only by the provisions of Article 1, Subchapter 1, Chapter 7, Subdivision 1 of this division (§22470 et seq.) and by such provisions of the other portions of this subdivision as are specifically referenced in that article.

(i) **Combined SWRCB/CIWMB Solid Waste Landfill Regulations**—The California Integrated Waste Management Board (**CIWMB**) and the SWRCB have promulgated the combined regulations contained in this division. For clarity, in moving the modified sections from their former location (in Chapter 15, Division 3, Title 23 of this code):

(1) **Section Title Coding**—the title of each SWRCB-promulgated section in the combined regulations begins with “SWRCB - ” and ends with the section number (in parentheses) that section had in Title 23 — *e.g., the notation “(C-15: §2540)” following the section title signifies that the subject section is*

*derived from §2540, Chapter 15, Division 3, Title 23 of this code, as that chapter existed prior to July 18, 1997; and*

(2) **Paragraph Subtitles**—subtitles have been added at the beginning of many paragraphs, to assist the reader in quickly finding specific portions of the SWRCB's requirements that address a particular issue.

**Note:** Authority cited: Section 1058, Water Code. Reference: Sections 13142, 13260 and 13263, Water Code.

**§20240. SWRCB - Classification and Siting Criteria.** (C15: §2530)

(a) **Units and Facilities** —Waste management units (**Units**) shall be classified according to their ability to contain wastes. Containment shall be determined by geology, hydrology, topography, climatology, and other factors relating to the ability of the Unit to protect water quality. A waste management facility can consist of several Units each with a different classification. Classification of Units shall be based on the criteria contained in this article, on field inspections by RWQCB and SWRCB staffs, and on other pertinent information. Information used to classify Units shall be submitted according to the provisions of Article 4, Subchapter 3, Chapter 4 of this subdivision (§21710 et seq.). Owners or operators of classified Units shall comply with waste discharge requirements (**WDRs**) adopted by the RWQCB.

(b) **Reclassification**—Existing Units shall be reclassified according to applicable criteria in this article, provided that such Units:

(1) comply with siting criteria for each category of existing Units in §20250 and §20260, and summarized in Table 3.1 of this article; and

(2) are operating in compliance with §20080(d).

(c) **Five-Foot Separation** — All new landfills, waste piles, and surface impoundments shall be sited, designed, constructed, and operated to ensure that wastes will be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water. Existing landfills, waste piles, and surface impoundments shall be operated to ensure that wastes will be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water. For new and existing land treatment units, the base of the treatment zone shall be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water and dischargers shall not be entitled to exemption under §20080(b).

(d) **Unit Foundation** — All engineered structures (including, but not limited to, containment structures) constituting any portion of a Unit shall have a foundation or base capable of providing support for the structures, and capable of

withstanding hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift and all effects of ground motions resulting from at least the maximum probable earthquake [for Class III Units (see §20370)] or the maximum credible earthquake [for Class II Units (see §20370)], as certified by a registered civil engineer or certified engineering geologist. *[Note: see also §21750(f)(5).]*

**Note:** Authority cited: Section 1058, Water Code. Reference: Sections 13172 and 13360, Water Code; Section 43103, Public Resources Code.

**20330. SWRCB - Liners.** (C15: §2542)

(a) **Performance Standard** — Liners shall be designed and constructed to contain the fluid, including landfill gas, waste, and leachate, as required by Article 3 of this subchapter (§20240 et seq., and §20310).

(b) **Clay Liners** — Clay liners for a Class II Unit shall be a minimum of 2 feet thick and shall be installed at a relative compaction of at least 90 percent. For a Class III landfill, a clay liner, if required, shall be a minimum of 1 foot thick and shall be installed at a relative compaction of at least 90 percent. For MSW landfills subject to the liner requirements in the federal MSW regulations of 40CFR258, after the Federal Deadline for liners at that Unit, the requirements of this paragraph are superseded by those of SWRCB Resolution No. 93-62 for all portions of the Unit outside the Existing Footprint.

(c) **FMLs** — Flexible membrane liners (“FMLs,” or synthetic liners) shall have a minimum thickness of 40 mils (i.e., 0.040”). For an MSW landfill subject to the liner requirements in the federal MSW regulations (40CFR258), after the Federal Deadline for liners at that Unit, the requirements of this paragraph are superseded by those of SWRCB Resolution No. 93-62 for all portions of the Unit outside the Existing Footprint.

(d) **Lined Area** — Liners shall be installed to cover all natural geologic materials (at the Unit) that are likely to be in contact with waste (including landfill gas or leachate).

(e) **S.I. With Replaceable Liner** — A Class II surface impoundment may have a single clay liner with a hydraulic conductivity of  $1 \times 10^{-6}$  cm/sec (i.e., 1 foot/year) or less if the liner is removed or replaced before the last 25 percent (minimum 1 foot thickness) of the liner is penetrated by fluid, including waste or leachate. The method used to determine seepage velocity shall be included with the calculations of liner penetration.

**NOTE:** Authority cited: Section 1058, Water Code; Reference: Sections 13172 and 13360, Water Code; Section 43103, Public Resources Code.

**§20340. SWRCB - Leachate Collection and Removal Systems (LCRS).** [C15: §2543 // T14: §17781(b)(2) & (d)(1)]

(a) **Basic LCRS Design** — Leachate collection and removal systems (**LCRS**) are required for Class II landfills and surface impoundments, and for Class III landfills which have a liner or which accept sewage or water treatment sludge. The LCRS shall be installed directly above underlying containment features for landfills and waste piles, and installed between the liners for surface impoundments. LCRS requirements are summarized on Table 4.1. Class II landfills and waste piles which contain only dry wastes (not including nonhazardous solid waste and decomposable waste) may be allowed to operate without an LCRS if the discharger demonstrates, based on climatic and hydrogeologic conditions, that leachate will not be formed in, or migrate from, the Unit; nevertheless, for a Class II or Class III MSW landfill, after the Federal Deadline for installing liners at that Unit, the LCRS requirements of SWRCB Resolution No. 93-62 apply to all portions outside of the Unit's Existing Footprint.

(b) **Placement** — Except as otherwise provided in (e or f), where an LCRS is used, it shall be installed immediately above the liner (except in the case of a surface impoundment), and between the inner and outer liner of a double liner system, and shall be designed, constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the Unit.

(c) **Head Buildup** — The RWQCB shall specify design and operating conditions in WDRs to ensure that there is no buildup of hydraulic head on the liner. The depth of fluid in the collection sump shall be kept at the minimum needed to ensure efficient pump operation.

(d) **Clogging** — LCRSs shall be designed and operated to function without clogging through the scheduled closure of the Unit and during the post closure maintenance period. The systems shall be tested at least annually to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions.

(e) **Standard LCRS** — LCRSs shall consist of a permeable subdrain layer which covers the bottom of the Unit and extends as far up the sides as possible, (i.e., blanket type) except as provided in (f). The LCRS shall be of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the Unit.

(f) **Alternative LCRS** — Except as otherwise required for MSW landfills, under SWRCB Resolution No. 93-62, if a Class III landfill is required to have an artificial liner and receives only permeable waste that allows free drainage of percolating

fluid, the RWQCB can allow the use of a dendritic LCRS which underlies less than 100 percent of the waste; in this type of LCRS system, only wastes which have an hydraulic conductivity which approximates that of subdrain material, and which will remain permeable throughout the active life and post closure maintenance period of the landfill, shall be placed adjacent to the liner. Furthermore, to prevent ponding, when using this type of LCRS, all portions of the liner not overlain by a portion of the subdrain system shall be sloped towards the subdrain so that ponding is minimized and leachate is removed as quickly as possible from the base of the landfill.

(g) **Leachate Handling** — Except as otherwise provided under SWRCB Resolution No. 93-62 (for MSW landfills subject to 40CFR258.28), collected leachate shall be returned to the Unit(s) from which it came or discharged in another manner approved by the RWQCB. Collected leachate can be discharged to a different Unit only if:

(1) the receiving Unit has an LCRS, contains wastes which are similar in classification and characteristics to those in the Unit(s) from which leachate was extracted, and has at least the same classification (under Article 3 of this subchapter) as the Unit(s) from which leachate was extracted;

(2) the discharge to a different Unit is approved by the RWQCB;

(3) the discharge of leachate to a different Unit shall not exceed the moisture holding capacity of the receiving unit, and shall comply with §20200(d).

(h) **Leachate Production Rate** — After July 18, 1997, for a landfill equipped with an LCRS, the discharger shall note, as a part of each regularly scheduled monitoring report [under Article 1, Subchapter 3, Chapter 3 of this division (§20380 et seq.)], the total volume of leachate collected each month since the previous monitoring report.

**Note: Authority cited: Section 1058, Water Code; Reference: Sections 13172 and 13360, Water Code; Section 43103, Public Resources Code.**